CITY OF MIAMI BEACH
Office of the City Manager

Letter to Commission No. 022-2005

To: Mayor David Dermer and Members of the City Commission **Date:** January 27, 2005

From: Jorge M. Gonzalez
City Manager

Subject: 900 Collins Avenue – Coral Rock Home
Demolition Status Report

The purpose of this LTC is to bring you the most recent information on the above referenced property.

Previously, the City had retained the services of Mr. Herb Gopman as a consulting engineer, in order to evaluate potential methods for preserving the subject structure. Due to a conflict as a member of a City Board, Mr. Gopman has decided not to continue his work.

Under an agreement with Dade Heritage Trust (DHT), Mr. Douglas Wood, PE, has been retained by the City as a structural engineering consultant and is being compensated for his work by the City. The City will be reimbursed for Mr. Wood's work by DHT.

Mr. Wood has met with the City's Building Official and, at the request of the owner of the property, has agreed to an indemnification in order to enter the property. On January 18, 2005, Mr. Wood visited the site and prepared a preliminary independent structural evaluation of the coral rock structure (see attached report from Mr. Wood).

On January 19, 2005 Mr. Wood presented a potential methodology for the repair of the exterior walls of the structure, and the replacement of the roof and flooring system, to the Miami-Dade County Unsafe Structures Board. Based upon the City's request to allow Mr. Wood additional time to complete his investigation and submit plans to the City's Building Official, the Unsafe Structures Board adopted a motion that allowed an additional thirty days for Mr. Wood to continue his investigation and prepare plans for stabilizing the structure and its repair, and submit them to the Building Official. However, if the City's Building Official finds that the proposed restoration plans are not permittable, the Unsafe Structures Board order will automatically convert into a demolition order.

Mr. Wood is currently working on a plan that will satisfy the requirements of the Building Official. The City's Building Official is to provide a report on the property's status at the next meeting (February 16, 2005) of the Unsafe Structures Board and the City's Historic Preservation Board will be discussing this matter again at their February 8, 2005 meeting.

The Administration will continue to update the Commission on the progress of this matter. If you have any questions relative to this property, or need additional information, please contact me.

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Attachments
c: Murray Dubbin, City Attorney
Gary Held, First Assistant City Attorney
Rhonda Montoya, First Assistant City Attorney
Bob Parcher, City Clerk
Phil Azan, Building Official
Jorge G. Gomez, Planning Director
William Cary, Assistant Planning Director
Thomas R. Mooney, Design and Preservation Manager

DOUGLAS WOOD

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January 19, 2005

Mr. Gary Held
First Assistant City Attorney
City of Miami Beach
1700 Convention Center Drive
Miami Beach, Florida 33139

Via: E-Mail

Reference: 900 Collins Avenue
Miami Beach, Florida

Dear Mr. Held:

As you requested, the writer, Mr. Douglas Wood, P.E. and an assistant, Mr. Kenneth Brown, E.I., visited the "Coral Rock House" at 900 Collins Avenue in Miami Beach yesterday, at approximately 11:15 a.m. The purpose of the site visit was to perform some preliminary observations of the existing structural systems of the "Coral Rock House" at the front of the property relative to developing some conceptual ideas for the restoration of this historical building.

As you know, we first met outside the building with you, Mr. Phil Azan (the City's Building Official), Mr. Mohammed Partovi (the City's structural engineering plans reviewer), Mr. William Cary (Assistant Director of the Planning Department), Mr. Michael Stern (one of the property owners) and Mr. Carter McDowell (the owner's attorney). Later, during the observation, we were also joined by Mr. Ivor Rose, another of the property owners.

As previously arranged, before entering the building, we discussed some general ideas for a restoration scheme, based on the writer's knowledge of the building from previously prepared reports and based on the writer's extensive experience in structural engineering for historical buildings in South Florida. Upon concluding the discussion, we were allowed to enter the building. We were told by the owner that the investigation was limited to the main house at the front of the property, and that the two-story residential building at the rear of the property and the former garage were not to be considered.

The following is a brief summary of some of our observations: (It should be noted again that these are preliminary observations. It should also be noted that the owner prevented us from removing any existing materials to gain further visual access to structural systems.):

Roof Structure

Previous removal of ceiling materials and perhaps previous loss of ceiling material due to water leakage along with a partial collapse of the ceiling joists left a large area of ceiling and roof framing exposed to view. This area extends from the south east corner of the building to about two-thirds of the way to the rear of the building.

Much of the ceiling and roof framing which was observed appeared to be fairly typical of very early residential construction in South Florida. The main roof rafters are small wood rafters supported periodically by vertical wood members which bear on the ceiling joists. The ceiling joists bear on pockets in the exterior masonry walls. At the interior, they are supported by wood bearing partitions and some masonry (rock) bearing walls.

The small mansard roof areas are lightly framed with wood and mostly bear on the masonry at the lower ends and connect to the roof framing at the upper ends.

It appeared that a previously existing bearing partition had been removed from the interior of the building, resulting in a collapse of a few ceiling joists.

As would be expected, the roof framing which was observed is inadequate relative to present day Building Code requirements.

Floor Structures

As expected, the interior floor structures consist of wood board sheathing on wood joists. The joists bear on the exterior masonry walls, interior concrete stemwalls and wood beams. Subsequent to the original construction, wood finish flooring was installed over plywood on furring strips over the original floor. Most of the wood flooring members appeared to be in relatively good condition. Of course, however, there are many aspects of the existing floor structure which do not conform to the present day Building Code requirements.

The floor of the exterior porches are concrete slabs.

Exterior Bearing Walls

Except for the C.M.U. walls of the small addition at the rear of the building, the exterior bearing walls are constructed of oolitic limestone (commonly called "coral rock"). The individual rocks were assembled in a rubble pattern with the joints mortared. The rocks are relatively randomly sized. Where measured, the walls were approximately ten inches thick. The thickness of mortar joints varies in response to the uneven stone surfaces. The unevenness of the rock and mortar placement resulted in holes and gaps throughout the areas of rock wall which were observed.

In those areas of rock wall which were exposed on the interior, it could be seen that additional mortar was troweled to the interior side of the wall. Presumably, this mortar was applied to improve the bond between rocks and also to anchor embedded wood strips for attaching the interior plaster finish. This interior coating of mortar was inconsistently placed, leaving the rocks exposed in many areas.

The embedded wood strips for attaching the interior plaster finish, which were observed, are oriented horizontally, with spacings varying from 16 to 25 inches. The strips which were measured are approximately 1 ¼" vertically by 1 ¾" horizontally.

There are concrete sills at most window openings. Lintels above the windows, however, appear to be constructed of rock and mortar and are probably supported by the window mullions.

There are a number of relatively large cracks in various areas in the walls. The writer could not, however, directly relate these wall cracks to cracks in the foundation, which would indicate significant foundation settlement. Nonetheless, some of these cracks may be related to some foundation settlement. They may also be related to swelling and shrinkage of the roof structure, the partial collapse of the ceiling, wind stresses and/or other causes.

Foundations

The observed foundations appear to be cast-in-place continuous concrete wall footings. Where measured, they are approximately 20 to 24 inches wide and approximately 12 inches deep. The footings appear to bear directly on the unimproved sandy soil approximately eight to twelve inches below the ground surface.

In one observed interior location, there is spalling of the bottom of the footing. Along the south side of the building, the top of the footing is exposed, and it appears to dip toward the middle of the south wall. At the preliminary observation, the writer did not observe specific wall cracks or footing cracks which would indicate significant post-construction settlement in this area. Also, the primary roof framing members (the ceiling joists) and floor members are oriented parallel to this wall, so that the long-term gravity loading to this wall is relatively light.

Preliminary Concepts for Restoration

At this time, it is assumed that the requirements of Section 3401.7.2.6 of the Florida Building Code (commonly referred to as the 50% Rule) will be applied to this project. This will require that all building systems, including structural systems be brought into compliance with current Building Code requirements. Of course, Section 3401.5 of the Florida Building Code allows the use of "alternative systems" if, in the opinion of the Building Official, public safety is maintained.

Assuming the application of the 50% Rule, all existing structural systems are inadequate relative to the current Building Code and are in need of significant enhancement or replacement. Also, given the relatively fragile bearing wall construction, it is our opinion that, at best, it will be possible to retain only the exterior

stone bearing walls (and out of necessity, their footings). All other construction would need to be removed from the building. Also, it must be noted that these restoration schemes noted below will be quite time consuming and quite expensive to accomplish.

Prior to any significant removal of existing construction, it will be necessary to thoroughly brace and shore the exterior rock walls to assure their stability during demolition and construction.

After the walls are stabilized and the remaining construction is removed, reconstruction may begin. At this time, we believe that this will, most likely, require the following:

1) After further soil investigation, it may be determined that soil improvement is required. Due to the presence of the rock walls and other nearby construction, heavy vibratory compactors are not recommended. However, chemical injection into sands below the footing bearing area may be appropriate. Luckily, this is a small one-story building, and the loads to the soils will be light.

2) At this preliminary stage, we believe that new wall footings can be cast adjacent to the existing footings. These footings will, however, be eccentric to the wall loads. This will, most likely, require the introduction of strap footings extending perpendicularly from the exterior walls to interior footings. The wall footings would be reinforced for torsion.

3) A reinforced concrete wall can be cast on the interior side of the existing rock walls. The existing rock walls will be anchored to the concrete by mechanical bonding of the concrete to the voids in the walls coupled with the frequent installation of rods embedded in the cast concrete and set in epoxy adhesive in the rock wall. These anchor rods may be the same rods used for the temporary stabilization.

4) The floor structure would probably most easily be constructed using a concrete slab-on-ground. A wood system, or wood finish could be considered, however.

5) The roof structure would probably most easily be accomplished using plywood sheathing on prefabricated wood trusses or solid wood joists. Other systems, such as insulating concrete on steel deck and steel beams, could also be considered.

   The roof structural system would be most efficient with a couple to a few (depending on the architectural floor plan) interior steel column supports. This would eliminate the many existing bearing partitions and make the interior more usable for commercial purposes.

At this time, we are preparing a sketch which illustrates these concepts. We will send it to you as soon as it is ready.

Sincerely,
DOUGLAS WOOD & ASSOCIATES, INC.

Douglas Wood, P.E.
President
PE 32092